I apologize for my initial response being so hasty. I offer the following additional thoughts upon further reflection:

1. You request comment on the proposal to remove the baud rate limits in Section 97.307(f), and the reasons for doing so.

   I endorse the proposal to remove the baud rate limits. Given advancement in radio technology, the no longer make sense, and they stifle innovation and experimentation by amateurs. While multiple respondents have highlighted PACTOR 4 as being a primary reason for the change, I note that other modes, including those used by MARS and government agencies operating on HF, would be usable by amateurs with this change.

2. You request comment on whether the removal of the baud rate limitation would enhance amateur communications, or would increase congestion.

   There do seem to be some pros and cons in this regard.

   Increased throughput and access to additional, professional digital modes should enhance amateurs' ability to offer contingent communications and potentially interoperate with non-amateur users of HF spectrum.

   For example, the Winlink system, which many amateurs have strong opinions (pro or con) about should be able to function more efficiently if higher baud rates are permitted, and removal of the limit should facilitate automated message routing via RF-only paths.

   A legitimate question could be asked about whether these improved capabilities will attract additional use of the automated systems such as Winlink, potentially offsetting the benefits of reduced airtime per message. If so, the limited spectrum currently available for automatically controlled digital stations (ACDS) operating wider than 500Hz could suffer congestion, which in turn may limit those systems' usefulness for emergency communications purposes. However, my belief is that at this time the benefits of removal of the symbol rate restriction would outweigh the risk of increased utilization congesting the ACDS-authorized frequencies.

   Outside the ACDS frequencies, I believe the short-to-mid-term risk of increased congestion is either at best limited, and at worst unclear. The prohibition against fully automated operation using wide signals outside the ACDS-authorized frequencies mean that transmissions by amateurs would be limited to experiments or keyboard-to-keyboard operations. Experiments tend to be limited by their nature, and it is unclear why any amateur, operating under generally accepted practices, would seek to be so inefficient as to use a wide, high-symbol-rate mode for keyboard-to-keyboard operation. Such use is generally not seen today, and removing the symbol rate limit should not generate such use.

However, there is the risk of the development of automated systems relying on modes within the existing (and proposed-to-continue) 500Hz limit. I am unaware of any such systems under development given the current emphasis on Pactor and Winmor, but the removal of the symbol rate limit could stimulate the development of such.

If a narrow, high-speed automated system were to emerge, issues and interference would likely arise with current users of the affected spectrum, judging by the challenges faced with the current implementations of ACDSs. However, given the lack of any such system on the horizon, these concerns may be better addressed in a future rulemaking, revisiting the subject of automated digital stations.

I believe that the risk of congestion is minor (or unclear) enough to not preclude removal of the symbol rate limit.

3. In rejecting the ARRL's proposal for a 2.8kHz bandwidth restriction on RTTY and data emissions, you express the belief that 97.307(a) is a sufficient restriction on too-wide signals.

   I respectfully disagree.

   97.307(a) states "[n]o amateur station transmission shall occupy more bandwidth than necessary for the information rate and emission type being transmitted, in accordance with good amateur practice."

   A strict, literal reading of this provision requires amateur stations to ensure that their emissions are no wider than a specific mode requires, but it does nothing on its own to govern an amateur's choice of mode.

   Given ongoing work exploring the capabilities of software-defined radios, it is conceivable that an emission type developed in the future that is 10kHz, 50kHz, or even 100kHz wide. Such a mode is conceivably permitted under the rules for the amateur service; 97.307(a) simply requires the amateur to occupy no more than 10/50/100kHz when using such a mode.

   One would hope that the standards of good amateur practice would include understanding that the use of a wideband mode is contingent on that emission not causing harmful interference with other users of that spectrum. However, as a practical matter, current amateur practice suggests that the users of wider digital modes have trouble detecting amateurs using narrower, frequently low-power digital modes. Is it not conceivable that someone using this hypothetical 10/50/100kHz wide mode might inadvertently cause harmful interference any time he/she seeks to use that mode?

   I suggest that an additional rule may be necessary if the symbol rate restriction is lifted without the imposition of an absolute bandwidth limit. A bandwidth analog to 97.313(a), requiring "an amateur station must use the minimum bandwidth necessary to carry out the

desired communications," would impose an obligation for the operator to select a mode appropriate for the type or RTTY/teletype communications being attempted.

For normal non-automated station-to-station communications, such language would encourage the use of a narrow mode (thereby promoting efficient shared use of the available spectrum), while leaving the door open to wider modes when conditions or automation warrant, for experimentation, and perhaps accommodating future developments.

4. You seek comment on your conclusion that adopting a flat 2.8kHz bandwidth limit would impose a loss of future flexibility, and invite input as to what bandwidth limits (if any) should be adopted on which frequencies.

   I agree that imposing an absolute bandwidth limit on RTTY/data emissions could constrain amateurs as operating interests and technology evolve. The experimental nature of amateur radio would be supported by maintaining some spectrum for such future developments.

   However, traditional and current amateur practice offer many examples of the challenges that arise given the breadth of interests and modes available to and indulged in by amateur radio operators.

   Of particular relevance here is the challenges that exist when amateurs seek to use both wide and narrow signals in similar spectrum. Depending on the style of operation, filtering on receivers may create difficulties in detecting other users of a particular frequency (or adjoining frequencies). Some users of certain narrow modes focus on low power operation which adds to the difficulties in preventing harmful interference when a potential user of a wider digital mode checks to see if the frequency is in use while monitoring a wider passband.

   Removal of the symbol rate limit will stimulate the use of existing / development of new wider modes that can capitalize on the additional rate. This, in turn could aggravate the existing problem of users of narrow and wide band modes seeking to coexist in the same section of spectrum.

   Therefore, I suggest that a bandwidth limitation be adopted for a portion of the RTTY/data subbands.

   I believe that a 500Hz limitation on frequencies below the ACDS-authorized ranges would recognize the current usage patterns, providing protection for narrow-band data and CW operators, and be harmonious with international regulation and bandplans, while still allowing some room for the use and development of wide band modes.

   The question of precise bandwidth limits and ranges of frequencies could be (and perhaps will be) debated ad nauseam among respondents. I believe my proposal has the advantage

of simplicity, fitting well with the limits already known to amateurs via the ACDS restrictions, and based on the current state of the art at least, provides an appropriate array of options to amateurs seeking to engage in non-automated RTTY/data communications.

Respectfully submitted,

Michael Adams